SYNTHETIC MINOR APPLICATION EVALUATION REPORT
McGuire Furniture Company
APPLICATION 8346 PLANT 5029

BACKGROUND:

The McGuire Furniture Company (McGuire) has chosen to apply for a Synthetic Minor Operating Permit (SMOP) to comply with the Title V permitting requirements of the Federal Clean Air Act. The Title V permitting requirements were implemented as a result of the 1990 revisions to the Federal Clean Air Act.

The McGuire Furniture Company manufactures fine custom furniture of rattan, woven peel, solid teak, bamboo, Oriental hardwoods, laced rawhide and cast aluminum. The McGuire Furniture Company was founded and has been in operation in San Francisco since 1948. Manufacturing of furniture at McGuire involves the following steps: 1) the receipt of raw materials and assembled products, 2) the milling and assembly of furniture, 3) the finishing of furniture, which includes cleaning, bleaching, staining, glazing and spray finishing, 4) upholstering of the furniture, 5) the final assembly of the furniture, and 6) packaging and shipping. The majority of McGuire's air emissions are precursor organic compounds (POC), non-precursor organic compounds (NPOC) and hazardous air pollutants (HAP) from the furniture finishing or coating operations. The majority of the coating sources have been in operation since 1970 and do not have any permit condition limits. The following sources are permitted at the McGuire Furniture Company.

S-1 Spray Booth with Dry Filter Control
S-2 Spray Booth with Dry Filter Control
S-3 Spray Booth with Dry Filter Control
S-4 Staining Operation – SOI
S-5 Glazing Operation G01
S-6 Solvent Wipe Cleaning Operation (exempt)
S-7 Andreae Filter Spray Booth
S-8 Coating Drying Room

In 2001, actual emissions from McGuire totaled 51.49 tons of volatile organic compounds (28.4 tons of POC and 23.0 tons of NPOC), 7.79 tons of all HAPs, and 2.39 tons of any one HAP. As per Regulation 2-6-312: Major Facility Review, Smaller Facilities, McGuire is required to apply for a major facility review permit unless they demonstrate that their potential to emit is below the major facility thresholds defined in Section 2-6-212, or the facility applies for and receives a synthetic minor permit. The McGuire Furniture Company has decided to apply for the SMOP to obtain enforceable permit conditions limiting any criteria pollutant to less than 95 tons per year and their HAP emissions to less than 23 tons per year for any combination of HAPS and less than 9 tons per year for any individual HAP.

EMISSION LIMITS STRATEGY:

To obtain a synthetic minor permit, a facility must have enforceable limits that keep the potential to emit below 95 tons per year of any regulated pollutant, below 9 tons per year of any single HAP, and below 23 tons per year of any combination of HAPs. These limits include permitted and unpermitted sources.

In the memo dated February 24, 1992, entitled "Use of Long Term Rolling Averages to Limit Potential to Emit" from John Rasnic, EPA has described nine source categories for which long-term average throughputs are acceptable. Qualification for the use of long term rolling averages to limit potential to emit under category number 7 for "plants where there may be variations in throughput due to unpredictable orders or contracts" applies to McGuire.

Because McGuire is a manufacturer of custom furniture, operations can be unpredictable due to the variability of the size, type, and timing of orders. In order to provide maximum flexibility at these sources, the permit conditions limit overall throughput or mass emissions, rather than specific amounts of individual materials. McGuire is required to keep detailed records, and summarize the emissions of precursor organic compounds (POC) and hazardous air pollutants (HAP) on a monthly basis.

McGuire has only one source category, which consists of solvent evaporating processes such as coating and solvent cleaning operations. The McGuire Furniture Company has 5 exempt sources: a natural gas fired boiler with a firing rate of 0.75 MMBtu/hr, a natural gas fired dryer for the S-8 Coating Drying room with a firing rate of 0.518 MMBtu/hr, a solvent cleaner (S-6), an adhesive operation, and a dust collection cyclone.

POC SOURCES

Based on the potential to emit calculation performed by McGuire, POC emissions from solvent sources are approximately 62.9 tons per year. This is well below the major source threshold of 100 tons per year. However, since there are no permit conditions that limit either the amount of POC or the type of materials to be used, all of the non-specific POC emissions could potentially be all the same hazardous air pollutant (not a likely situation, but possible under the permit conditions). There are no permit conditions to ensure that emissions of any single HAP are less than 10 tons per year. Therefore, this SMOP will include record keeping and emission calculations for HAPs sufficient to demonstrate that individual HAP emissions are less than 10 tons per year.

McGuire will monitor and record the amount of material used at the solvent evaporating sources. McGuire will calculate POC and HAP emissions based on a conservative emission factor of 100% solvent loss from the products (unless McGuire can document waste sent off-site for disposal or recycling). The quantities of materials used, and the chemical composition information from the associated Material Safety Data Sheets (MSDS) will be used to calculate the maximum potential emissions of POCs and HAPs. The potential emission may be reduced by subtracting the POC and HAP content of any specific waste material collected for off-site recycling or disposal (as recorded in hazardous waste manifests). Materials collected for off-site recycling do not contribute to POC or HAP emissions at the facility, and therefore, may be subtracted from the materials used at the facility, to yield "net POC and HAP" emissions from the facility.

Any material collected for recycle which cannot be specifically identified, such as mixtures of solvents, will not be used to reduce POC and HAP emissions from operations listed in the solvent and

coating usage category. This method of record keeping will result in a conservative estimate of the amount of POC and HAP emissions from the plant.

Non-precursor organic compounds will not be tracked for the purposes of the synthetic minor permit unless they are also HAPs. Since the threshold for ozone-depleting compounds (ODC) is 100 tons per year for each ODC, and the facility does not have District permits for these quantities of ODC, these compounds will not be tracked for the purposes of the synthetic minor permit.

EXEMPT SOURCES

The emissions from the exempt sources are very small and McGuire will not be required to monitor emissions from these sources.

- Source S-6 Solvent Wipe Cleaning Operation: Assume a solvent usage of 1 gallon per year based on historic reported usage. McGuire has switched from methyl alcohol to an aqueous cleaner with a POC content less than 0.42 pounds per gallon. With the new aqueous cleaner, only 0.42 pounds or 0.00021 tons of POC per year will be emitted.

- Adhesive: The adhesive used at McGuire does not contain any volatile organic compounds or hazardous air pollutants. Zero tons of POC per year will be emitted.

- Dust Collection Cyclone: The cyclone is used to collect sawdust from the woodworking operations. At maximum throughput, 30 pounds of dust per day were collected by McGuire. This is an extremely conservative estimate since much of the furniture is received preassembled and needs minimal shop work. In addition, only a small portion of the dust is PM10. McGuire operates 5 days a week for 48 weeks per year. McGuire has a conservative potential to emit of 3.6 tons of PM10 per year, which is far below the major facility trigger of 100 tons of PM10 per year.

- Natural-Gas Fired Equipment: Fitzgibbons R-Z-U Junior Boiler, 0.75 MMBtu/hr and Dryer for S-8 Coating Drying Room, 0.518 MMBtu/hr: The combustion products from the exempt boiler and dryer are very low. Combustion emissions calculated using EPA AP-42 emission factors from Table 1.4-1 from natural gas combustion is tabulated below.

  NOx 0.530 tons per year
  CO 0.445 tons per year
  SO2 0.003 tons per year
  VOC 0.029 tons per year
  PM10 0.040 tons per year

  The only sources of NOx, CO, and SO2 are from the products of combustion and are very low. The amount of VOC and PM10 from combustion is extremely low and are negligible compared with VOC from coating sources and PM10 from the cyclone.

EMISSION CALCULATIONS

POC and HAP emissions are based on material throughputs multiplied by the respective POC and HAP content of the material. Emission calculations were performed by the applicant and confirmed by the District. The Total POC and HAP emission limit for the plant will be 50 tons per year of POC emissions and 23 tons per year of total HAP and 9 tons per year of any single HAP.

Emissions (tons per year)

	POC	NPOC	NOx	SO2	CO	PM10	HAPS single	HAPS total
Coating Sources	**28.4**	23.01				0.1	2.39	**7.79**
Exempt Sources	0.0002		0.530	0.003	0.445	3.64		
TITLE V LIMITS	100		100	100	100	100	10	25
Reg. 2-6-312	**25**		25	25	25	25	2.5	**6.25**
SMOP LIMITS	50						9	23

STATEMENT OF COMPLIANCE:

This facility is in compliance with the necessary requirements in Regulation 2, Rule 6 to obtain a synthetic minor permit. The McGuire Furniture Company has voluntarily accepted enforceable permit conditions including emission limits that will keep McGuire's potential to emit under 50 tons per year of any regulated air pollutant, 9 tons of any hazardous air pollutant, and 23 tons of any combination of hazardous air pollutants. To establish compliance, monthly totals of POCs and HAPs will be maintained and a 12-month rolling average calculated each month.

CONDITIONS:
The McGuire Furniture Company, Plant #5029, has a synthetic minor operating permit. This operating permit covers all sources at the facility.

Synthetic Minor Condition #21347

The following conditions establish the permit terms that ensure this plant is classified as a Synthetic Minor Facility under District Regulation 2, Rule 6 - Major Facility Review and ensure it is not subject to the permitting requirements of Title V of the Federal Clean Air Act as amended in 1990 and 40 CFR Part 70. All applications submitted by the applicant and all modifications to the plant's equipment after issuance of the synthetic minor permit must be evaluated to ensure that the facility cannot exceed the synthetic minor general limits below, and that sufficient monitoring, record keeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this plant's status as a Synthetic Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a Synthetic Minor must undergo the procedures specified by Rule 2-6, Section 423. The basis for the synthetic minor conditions is an emission limit for regulated air pollutants of less than 95 tons per year, an emission limit for a single hazardous air pollutant of less than 9 tons per year, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year.

The permitted sources at the facility on the date of issuance of the synthetic minor permit are:

S-1 Spray Booth with Dry Filter Control
S-2 Spray Booth with Dry Filter Control
S-3 Spray Booth with Dry Filter Control
S-4 Staining Operation – SOI
S-5 Glazing Operation G01
S-6 Solvent Wipe Cleaning Operation (exempt)
S-7 Andreae Filter Spray Booth
S-8 Coating Drying Room

The following permit conditions are District conditions that do not establish this facility as a Synthetic Minor: 1724.

Synthetic Minor Conditions:

1. The owner/operator shall ensure that this facility, subject to a Synthetic Minor Operating Permit, shall emit no more than the following quantities of emissions in any 12-month period:

    a. 95 percent of the major source thresholds for regulated air pollutants (excluding HAPs),
    b. 9 tons per year of any single HAP,
    c. 23 tons per year of any combination of HAPs, and
    d. 90 percent of any lesser threshold for a single HAP as the U.S. EPA or District may establish by rule.

    These limits shall include emissions from permitted, unpermitted, portable, and temporary sources at the facility except those sources defined as non-road engines as defined in 40 CFR 89. These limits are for the purpose of this Synthetic Minor Operating Permit only, and do not allow the owner/operator to exceed any other District permit conditions. These Synthetic Minor Operating Permit limits shall not be used as actual emissions, a permitted emission level or baseline emission level in conjunction with new source review, banking of emission reduction credits, or any other District rule.

(basis: Synthetic Minor)

2. The owner/operator shall limit individual HAP emissions from all sources combined to no more than 9.0 tons in any consecutive 12-month period. The owner/operator shall limit any combination of HAPs from all sources combined to more than 23 tons in any consecutive 12-month period.

(basis: Synthetic Minor)

3. Emissions of Precursor Organic Compounds from all sources combined shall not exceed 100,000 pounds (50 tons) in any consecutive 12-month period.

(basis: Synthetic Minor)

4. The owner/operator shall maintain coating and solvent usage documentation that lists the mass emissions of Precursor Organic Compounds (POC) and HAPs from all non-combustion sources.

a. Maintain records of Material Safety Data Sheets (MSDS) or other product information identifying the POC content and individual HAP contents for each of the solvent-containing materials used at the sources;
b. Keep a log of the quantity of each solvent-containing material used at each source, summarized on a monthly basis. This log may be based either on usage records or by purchasing records.
c. Calculate monthly emissions of POC and individual HAPs from each source, based on the quantities of materials used and the chemical composition information from the associated Material Safety Data Sheets (MSDS)
d. The owner operator may keep records (i.e. waste manifests) of the amount of specific solvent-containing material disposed of as waste, and deduct such waste from the monthly POC and/or HAP emission calculations. Any material collected as waste which cannot be specifically identified, such as mixtures of solvents, shall not be used to reduce POC and HAP emissions. A representative analysis may be done before any of the waste material is removed and may be used to reduce POC and HAP emissions.
e. Calculate POC and individual HAP emissions on a rolling 12-month basis for each source. Emissions from the spray booths (S-1, S-2, S-3, and S-7) may be grouped together.
f. Calculate total POC and individual HAP emissions from the total of all sources for each month, and on a rolling 12-month basis.

The owner/operator shall complete monthly emission calculations and rolling 12-month summaries within 30 days of the end of each calendar month. The owner/operator shall keep all the information required to calculate POC and HAP emissions for at least five years, and shall make those records available for review during normal business hours by the District's representatives.

(basis: Synthetic Minor)

5. The Owner/Operator shall prepare an annual emissions report. The report shall contain the following items for the year ending September 30:

a. Total HAP emissions.
b. Total POC emissions.

This report shall be submitted to the Director of Compliance and Enforcement by October 31 of each year.

(basis: Synthetic Minor)

6. The owner/operator shall report non-compliance with any of the above conditions in writing to the Director of Compliance and Enforcement within 10 calendar days of discovery of non-compliance.

(basis: Synthetic Minor)

Prepared by:

_____

Pamela Leong
Air Quality Engineer II

March 22, 2004